Amy E. W. Bednar, PhD
Research Mathematician
CEERD-IE-C
Amy.E.Bednar@usace.army.mil

Education

- 2003 PhD, Mathematics specializing in Topology, University of Mississippi, Oxford, MS
- 2002 MS, Mathematics, University of Mississippi, Oxford, MS
- 2000 BS, Mathematics and English, Spring Hill College, Mobile, AL

Professional Experience

- Research Mathematician, US Army Engineer Research and Development Center, Information Technology Laboratory, Vicksburg, MS (2009 - present)
- Staff Scientist, Applied Research Associates, Inc., Vicksburg, MS (2004 - 2009)
- Teaching Assistant (Trigonometry Course Coordinator), University of Mississippi, Oxford, MS (2000-2003)

Research Interest/Research Projects

- Performs numeric analysis and develops numeric models
- Collaborator in ongoing nanomaterials risk research
- Leading the life cycle analysis model adaptation and comprehensive environmental assessment process model development for the Center for Directed Research Project, Comprehensive Environmental Assessment for Nano-Enabled Defense and Dual Use Capabilities
- Modeling ambient movement for the Virtual Autonomous Navigation Environment
- Developed Search Rivers database website which computes simple statics and utilizes a k - nearest neighbor search algorithm

Professional Memberships

- Member, Phi Kappa Phi, Honor Society
- Member, American Mathematical Society (AMS)
- Member, Mathematical Association of America (MAA)
- Society of Women Engineers (SWE)
    - 2005 Vice President of Mississippi River City SWE Chapter
    - 2006-2007 President of Mississippi River City SWE chapter
    - FY08 Council of Representatives Mississippi River City SWE Chapter
    - FY07-FY08 Environmental Scanning FIG National chair
    - FY07-FY08 Program Development Grant committee member
    - FY08 Secretary for the SWE Gulf Coast Region
    - FY06-FY08 SWE counselor for University of Mississippi
    - 2006 - 2008 Engineers Week Committee

Additional, Honors, and Recognitions

- FY 2006 Business Development Award, Applied Research Associates, Inc.

- FY 2005 Technical Achievement Award for Firefighter Forcible Entry Training, Applied Research Associates, Inc.
- Graduated Summa Cum Laude from Spring Hill College
- Phi Kappa Phi, Honor Society
- Sigma Tau Delta, English Honor Society
- Pi Mu Epsilon, Math Honor Society
- Presidents Scholar for Mathematics (highest Mathematics Award at Spring Hill College)
- Edward Day Stewart Award in English, Spring Hill College (presented to the member of the graduating class majoring in English who has attained the highest English average during four years at Spring Hill College)
- University of Mississippi representative to 2002 International Congress of Mathematicians Conference, Beijing, China

Publications

- Protective Glazing Manual, 2010 edition, Author of "Egress" Chapter, Glass Association of North America (GANA) and PGC International, 2010.
- Paterson, Alan L., Welch, Amy E., “Path Space Topologies and a Tychonoff Theorem for Locally Compact Spaces”, University of Mississippi, Proceedings of the American Mathematical Society, Volume 133, Number 9, Pages 2761-2770, April 20, 2005.
- Welch, Amy E., “Tychonoff’s Theorem and the Metric Topology of Path Spaces”, Ph.D. dissertation, University of Mississippi, October, 2003.